GRIFFIN INTERNATIONAL INC

JUL 6 9 57 AM '98

July 2, 1998

Mr. Chuck Schwer
VT Department of Environmental Conservation
Waste Management Division
103 South Main St./ West Bldg.
Waterbury, VT 05671-0404

RE: Subsurface Investigation, Prunier's Market, Hydeville, VT (VTDEC #97-2225)

Dear Chuck:

Enclosed please find the June 1998 *Report on the Site Investigation of Suspected Subsurface Petroleum Contamination* for the Prunier's Market site in Hydeville, Vermont. Mr. William Prunier requested that we forward a copy to you. Please do not hesitate to call if you have any questions or comments.

Sincerely,

Timothy J. Kelly, PG
Geologist

Encl.

cc: William Prunier (w/o encl.)
GI #129741165

P.O. Box 943 • Williston, VT 05495 • Phone/Fax 802-865-4288
59 Clinton Street • Plattsburgh, NY 12901 • 518-562-4666 • Fax 518-561-6832

REPORT ON THE SITE INVESTIGATION OF SUSPECTED SUBSURFACE PETROLEUM CONTAMINATION

AT

PRUNIER'S MARKET
Hydeville, Vermont

VTDEC Site #97-2225
Griffin Proj. #129741165

June 1998

Prepared For:

William Prunier
PFB, Inc.
PO Box 137
Bomoseen, VT 05732

Prepared by

GRIFFIN INTERNATIONAL INC

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(802) 865-4288

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I. INTRODUCTION

This report provides a summary of the tasks completed for the site investigation of suspected subsurface petroleum contamination at the Prunier's Market at the intersection of Routes 30 and 4A in Hydeville, Vermont (see Site Location Map in Appendix A). Results of the following investigative tasks performed by Griffin International, Inc., (Griffin) are presented:

- ◊ monitoring well installation;
- ◊ site survey;
- ◊ determination of groundwater flow direction and gradient;
- ◊ groundwater sampling and analyses;
- ◊ sensitive receptor survey.

This work is being performed based on a request from Mr. Chuck Schwer of the Vermont Department of Environmental Conservation (VTDEC) in a letter to Mr. William Prunier of PFB, Inc., owner of Prunier's Market, dated October 30, 1997. Work was performed in accordance with the November 24, 1997, *Work Plan and Cost Estimate for Subsurface Investigation of Suspected Petroleum Contamination*, prepared by Griffin.

II. SITE BACKGROUND

Prunier's Market is located on the north side of Vermont Route 4A, approximately one half mile west of the intersection of Routes 30 and 4A in Hydeville, Vermont (see Site Location Map in Appendix A). Topography at the site generally flat. The property is surrounded on the west, north, and east by residential/commercial properties and on the south by Route 4A, across which are several residential and commercial properties. An unnamed ephemeral stream that drains into Lake Bomoseen flows west approximately 1,500 feet to the north of the property.

The subject property and the surrounding properties are served by private water supply wells. The subject property and the other properties in the area is served by the Castleton municipal sewer system. The site is underlain by well sorted littoral sands according to the *Surficial Geologic Map of Vermont* (Ref. 1). The bedrock underlying the site is mapped as purple, gray-green, and variegated slate and phyllite of the Cambrian-aged St. Catherine Formation, according to the *Centennial Geologic Map of Vermont* (Ref. 2). Drill cuttings from the new water supply well installed north of the Prunier's Market building (See Site Sketch, Appendix A) were examined on April 8, 1998, and are consistent with the interpretation of the *Centennial Geologic Map of Vermont.*

The suspected sources of petroleum contamination at the site are leakage and spills associated with the piping near the gasoline dispensers at the pump island as detected during a piping replacement and underground storage tank (UST) removal inspection on June 23 and 24, 1997.

The gasoline dispensers were replaced during the UST and systems upgrade performed in June 1997. The existing gasoline dispensers are in approximately the same location as the previous dispensers. An 8,000-gallon UST for storing gasoline and a 4,000-gallon UST for storing kerosene were installed as replacements in the excavation from which the previously used USTs were removed. Approximately 15 cubic yards of petroleum contaminated soils identified during the inspection were stockpiled and polyencapsulated on-site and northwest of the Prunier's Market building.

III. INVESTIGATIVE PROCEDURES

To further define the extent of subsurface petroleum contamination in the area of Prunier's Market, the following additional investigative tasks were undertaken as per the November 24, 1997, Work Plan: installation of four monitoring wells; site survey; determination of groundwater flow direction and gradient; groundwater sampling and analyses for petroleum-related constituents; and an evaluation of sensitive receptors.

A. Monitoring Well Installation

On April 7 and 8, 1998, four overburden monitoring wells were installed at the site (see Site Sketch in Appendix A). The boreholes were installed utilizing vibratory drilling methods. Adams Engineering of Underhill, Vermont, installed the wells under the direct supervision of a Griffin geologist. During borehole advancement, continuous soil samples were collected from every five foot run. Soils were screened for volatile organic compounds (VOCs) using an HNu™ Model PI-101 portable photoionization detector (PID) using the Griffin Jar/Polyethylene Bag Headspace Screening Protocol, which conforms to state and industry standards. Soil characteristics and headspace concentrations were recorded by the geologist in detailed well logs which are presented in Appendix B.

Monitoring well construction records are included in Appendix B. Wells were completed with 1.5-inch diameter Schedule 40 PVC riser and factory-slotted screened intervals (0.010-inch slots). A silica sand pack was installed in the annular space surrounding the screened interval. The sand pack was brought to a minimum of one foot above the top of the screened interval. Each of the four wells was completed with a flush-mounted road box and secured with a compression cap.

The soils encountered in the monitoring well boreholes consisted of light to medium brown, fine to medium sand interbedded with silt. These findings are consistent with the interpretation of the *Surficial Geologic Map of Vermont* (Ref. 1). No volatile organic compounds (VOCs) were detected above 1 part per million (ppm) in the headspace of soil samples collected from the MW-1, MW-3, or MW-4 boreholes. Low concentrations of VOCs were detected above 1 ppm in the soil screening sample collected from 24.8 feet to 29.8 feet below grade in MW2. Minor

petroleum odors were observed in the MW-2 borehole. No petroleum odors were observed in the MW-1, MW-3, or MW-4 boreholes.

The borehole for MW1 was completed to a depth of approximately 29.4 feet below grade. Groundwater was encountered at approximately 25 feet below grade. The screen and casing were then driven to a depth of 29.7 feet below grade. The soils encountered in the borehole consisted of interbedded sands and silts, with a silt bed from 19.6 feet to 22.0 feet below grade. The well was completed with a 5-foot screened interval from 24.7 to 29.7 feet below grade. The borehole was sealed through the lower silt layer with a bentonite slurry from 22.9 feet to approximately 6 feet below grade.

The borehole for MW2 was completed to a depth of approximately 29.8 feet below grade. Groundwater was encountered at approximately 27.5 feet below grade. The soils encountered in the borehole consisted of interbedded sands and silts, with a silt bed from 21.4 feet to 25.7 feet below grade. The well was completed with a 5-foot screened interval from 24.8 to 29.8 feet below grade. The borehole was sealed through the lower silt layer with a bentonite slurry from 23 feet to approximately 6 feet below grade.

The borehole for MW3 was completed to a depth of approximately 34.8 feet below grade. Groundwater was encountered at approximately 28 feet below grade. The soils encountered in the borehole consisted of interbedded sands and silts, with a silt bed from 25.2 feet to 25.7 feet below grade. The well was completed with a 5-foot screened interval from 27 to 32 feet below grade. The borehole was sealed through the lower silt layer with a bentonite slurry from 26.2 feet to approximately 6 feet below grade.

The borehole for MW4 was completed to a depth of approximately 29.4 feet below grade. Groundwater was encountered at approximately 24.3 feet below grade. The soils encountered in the borehole consisted of sand with silt. No silt bed was encountered at depth in this borehole. Therefore, the well was completed with a 10-foot screened interval from 19 to 29 feet below grade. The borehole was sealed with a bentonite slurry from 18 feet to approximately 6 feet below grade.

B. Determination of Groundwater Flow Direction and Gradient

The four wells were located in azimuth and elevation for inclusion on the Site Sketch presented in Appendix A. The top of PVC casing in MW1 was assigned an arbitrary elevation of 100.00 feet. The locations of the old and new drilled water supply wells were also surveyed for inclusion on this Site Sketch.

Prior to groundwater sampling on April 28, 1998, all four on-site monitoring wells were monitored for presence of free floating product and depths to water. Results are tabulated as Liquid Level Monitoring Data in Appendix C. No free-phase product was noted in the wells on

April 28, 1998. For each well, the measured depth to water was subtracted from the surveyed elevation of the measurement reference point to determine the water table elevation. Water table elevations were plotted on the site sketch map to generate the Groundwater Contour Map presented in Appendix A. From this figure it can be seen that the groundwater flow is directed generally to the northwest toward an ephemeral stream which flows into Lake Bomoseen at an approximate gradient of 2.5%.

Based on the flow direction and gradient determined for this site, MW-1 and MW-4 are downgradient of the former USTs and the kerosene dispenser and MW-2 is directly downgradient of the current and former gasoline dispensers.

C. Groundwater Sampling and Analyses

A groundwater sample was collected from each of the four on-site monitoring wells, using disposable bailers, on April 28, 1998. Groundwater samples were analyzed by EPA Method 602 by Endyne, Inc., laboratory of Williston, Vermont, for petroleum-related constituents including benzene, toluene, ethylbenzene, and xylenes (BTEX) compounds and MTBE and by Modified EPA Method 8100 for total petroleum hydrocarbons (TPH). A sample was also collected from the supply well in use and analyzed by EPA Method 602. Quality control (QC) samples (a trip blank and duplicate sample) were also collected. Analytical results are summarized in tabular form in Appendix D. The applicable groundwater standards are provided for reference in this summary table. Appendix D also contains the analytical laboratory reports. Analytical results of the trip blank and duplicate sample indicate that adequate Quality Assurance/ Quality Control was maintained throughout sample collection and analyses.

BTEX compounds and MTBE were detected in MW-2. Total BTEX and MTBE concentrations detected in the monitoring wells were plotted on the Site Sketch to generate the Contaminant Concentration Map contained in Appendix A.

The concentrations of benzene and MTBE detected in MW2 were above the Vermont Groundwater Enforcement Standards (VGES) for these constituents. No VOCs were detected in samples collected from MW-1, MW-3, or MW-4 on April 28, 1998. No TPHs were detected in samples collected from MW-1, MW-3, or MW-4 on April 28, 1998. No VOCs were detected in samples collected from the supply well on April 28, 1998.

IV. EVALUATION OF POTENTIALLY SENSITIVE RECEPTORS

The following potentially sensitive receptors in the vicinity of the Prunier's Market site were identified:

- the existing Prunier's Market building,

- the on-site supply wells,
- the first order tributary to Lake Bomoseen, located approximately 1,500 feet north of the Prunier's Market site.

The basement under the Prunier's Market building was inspected and screened with a PID for the presence of organic vapors on April 8, 1998. No organic vapors were detected with the PID during that screening. No VOCs were detected in the on-site supply well in use at the time of sampling. In addition, a new drilled water supply well was installed to comply with permitting requirements for the construction of an addition to the Prunier's Market building. The new supply well was put into use in May 1998, according to Mr. Prunier. Given the significant distance of the new supply well from the source area and the lack of VOCs detected in MW-4, the risks posed to the new supply well are likely to be minimal. Given the significant distance from the site to the ephemeral stream draining into Lake Bomoseen and the low apparent source strength of the contamination, the current risks posed to this surface water body are likely to be minimal.

V. CONCLUSIONS

Based upon the results of the above investigative tasks, Griffin presents the following conclusions:

1) Based on the soil screening data from the UST removal/ piping upgrade and screening and laboratory analytical data from this investigation, it appears likely that the contamination at the site is the result of minor leakage associated with the gasoline dispensers formerly used at the site and since replaced.

2) Four monitoring wells were installed to depths ranging from 29 to 32 feet below grade on April 7 and 8, 1998.

3) Groundwater was encountered at an approximate average depth of 26 feet on April 28, 1998. Based on the groundwater elevations measured on April 28, 1998, groundwater flows to the northwest at an approximate gradient of 2.5%. With respect to shallow groundwater flow, MW-1 and MW-4 are downgradient of the former USTs and kerosene dispenser and MW-2 is directly downgradient of the former dispenser island.

4) No free phase product has been detected in the on-site monitoring wells.

5) Dissolved petroleum -related compounds were detected in the sample collected from MW-2 on April 28, 1998. The concentration of benzene and MTBE in the sample from MW-2 exceeded the VGES for these compounds. TPHs were also detected in the sample collected from MW-2 on April 28, 1998; there is no VGES for TPH. No VOCs or TPHs were detected in

samples collected from MW-1, MW-3, or MW-4 on April 28, 1998. It is expected that dissolved petroleum constituent concentrations will decrease over time with the progressive action of natural mitigative processes, including biodegradation, dispersion, and dilution.

6) Risks posed to potentially sensitive receptors in the vicinity of the Prunier's Market building appear minimal, based on currently available data.

VI. RECOMMENDATIONS

Based upon the above conclusions, Griffin recommends the following additional work. To document expected reductions in constituent concentrations, groundwater from monitoring wells MW-1 through MW-4 should be sampled and analyzed in October 1998. Samples should be analyzed by EPA Method 602 for presence of BTEX and MTBE constituents. Recommendations for any additional monitoring that is warranted will be made depending on the results of the October 1998 sampling round.

In addition, the on-site stockpile of contaminated soil should be screened annually, beginning in October 1998, until contaminant levels within the pile are no longer detectable (i.e., less than 1 ppm) as indicated by a PID and there is no visual or olfactory evidence of contamination. It is likely that the decrease in contaminant level may be increased significantly by turning the pile occasionally to allow oxygen to mix into the soils for enhanced natural bacteriological activity within the soil pile. The polyethylene liner that fully encapsulates the soil pile should be maintained and replaced occasionally, as needed. After VOC concentrations reach non-detect as measured with a PID and there is no visual or olfactory evidence of contamination, the soils may be spread or back filled on-site following approval from the VTDEC.

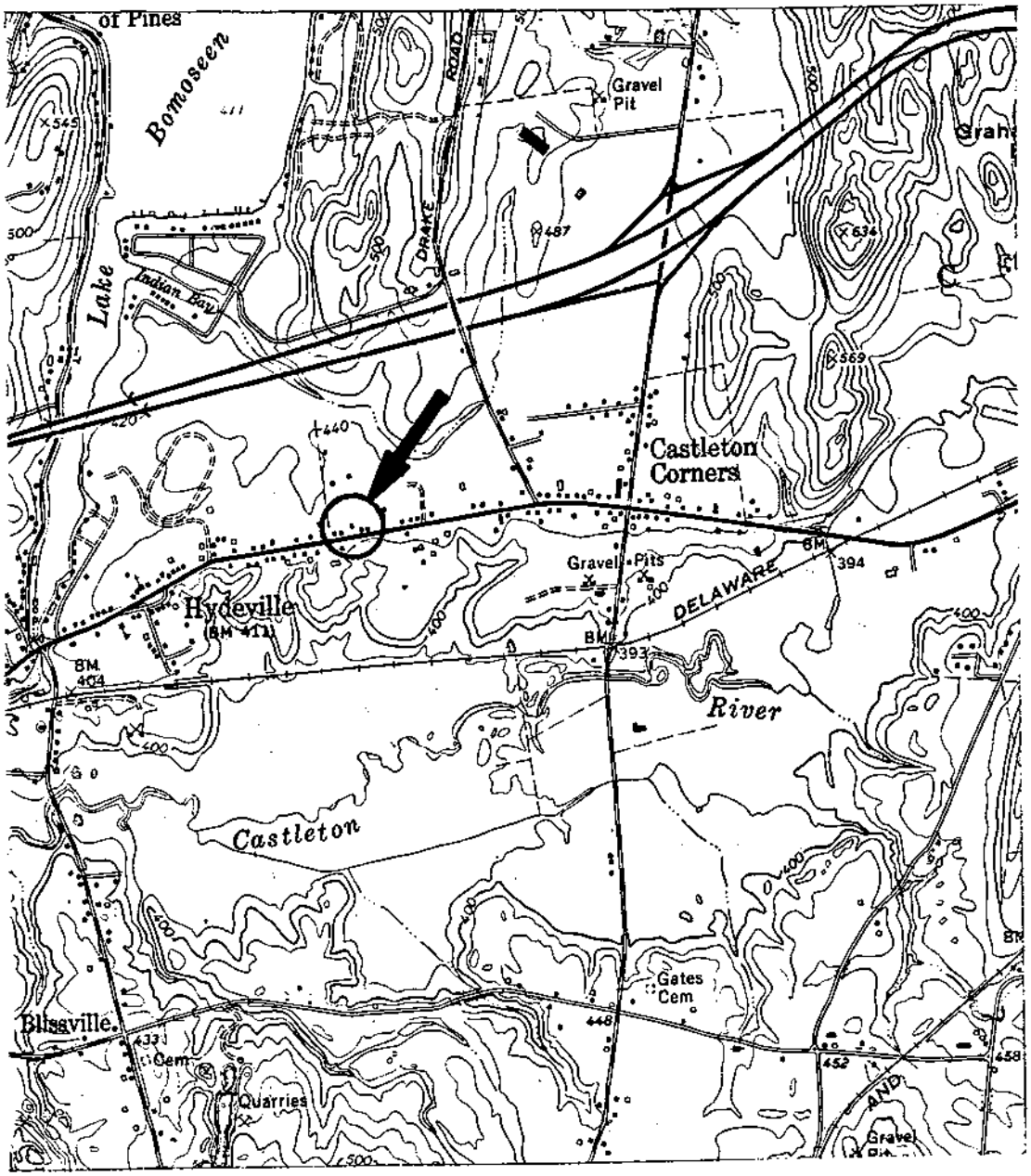
VII. REFERENCES

1. Doll, Chuck G., D.P. Stewart, and P. MacClintock, eds., 1970, *Surficial Geologic Map of Vermont*, State of Vermont.

2. Doll, Chuck G., W.M. Cady, J. B. Thompson, Jr., and M.P. Billings eds., 1961, *Centennial Geologic Map of Vermont*, State of Vermont.

APPENDIX A

Site Maps



JOB #: 129741165
SOURCE: USGS- POULTNEY, VERMONT QUADRANGLE

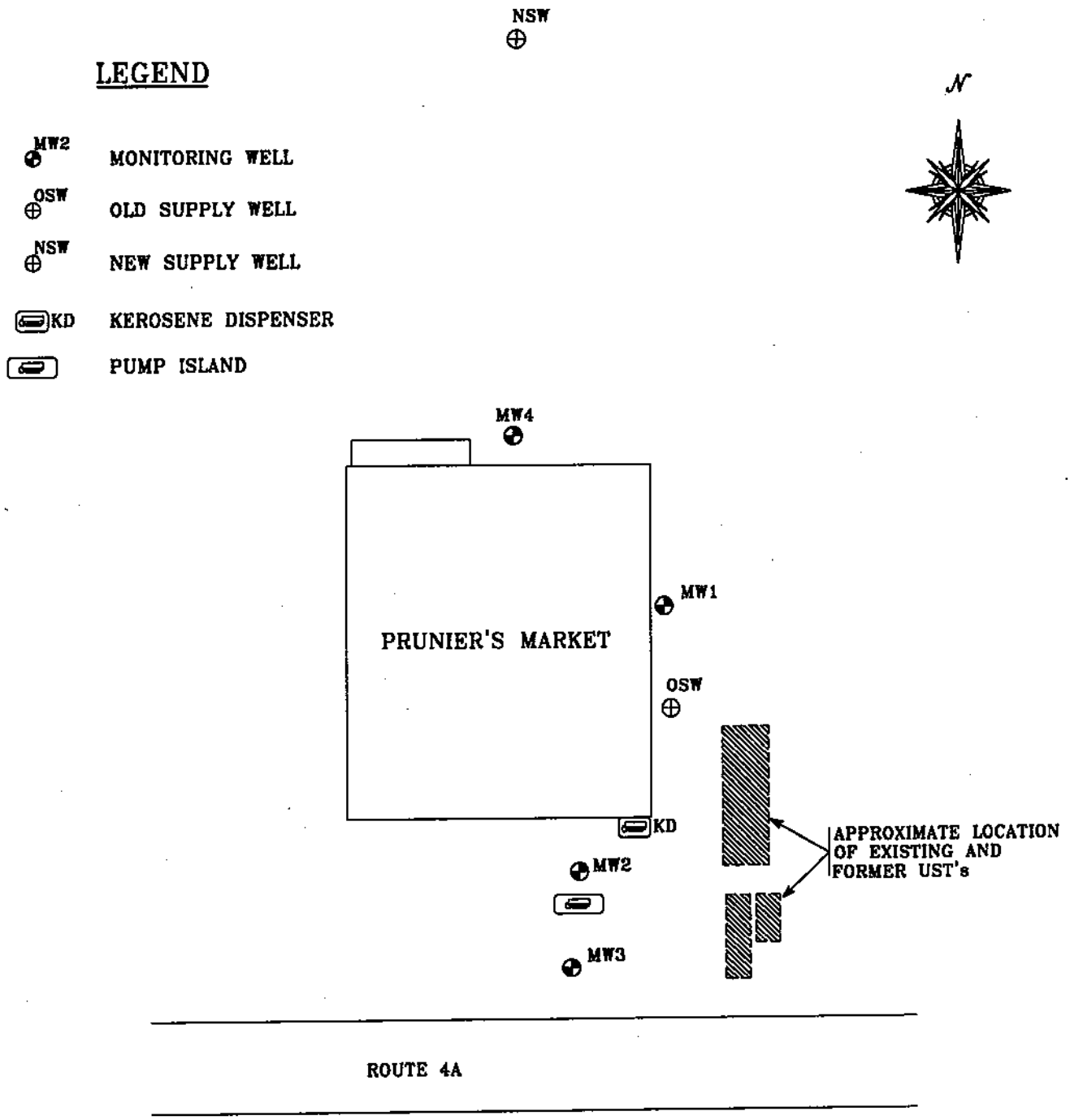
GRIFFIN INTERNATIONAL INC

PRUNIER'S MARKET

HYDEVILLE, VERMONT

SITE LOCATION MAP

DATE: 6/9/98	DWG.#:1	SCALE: 1:24000	DRN.:SB	APP.:TK



JOB #: 129741165

GRIFFIN INTERNATIONAL INC

PRUNIER'S MARKET

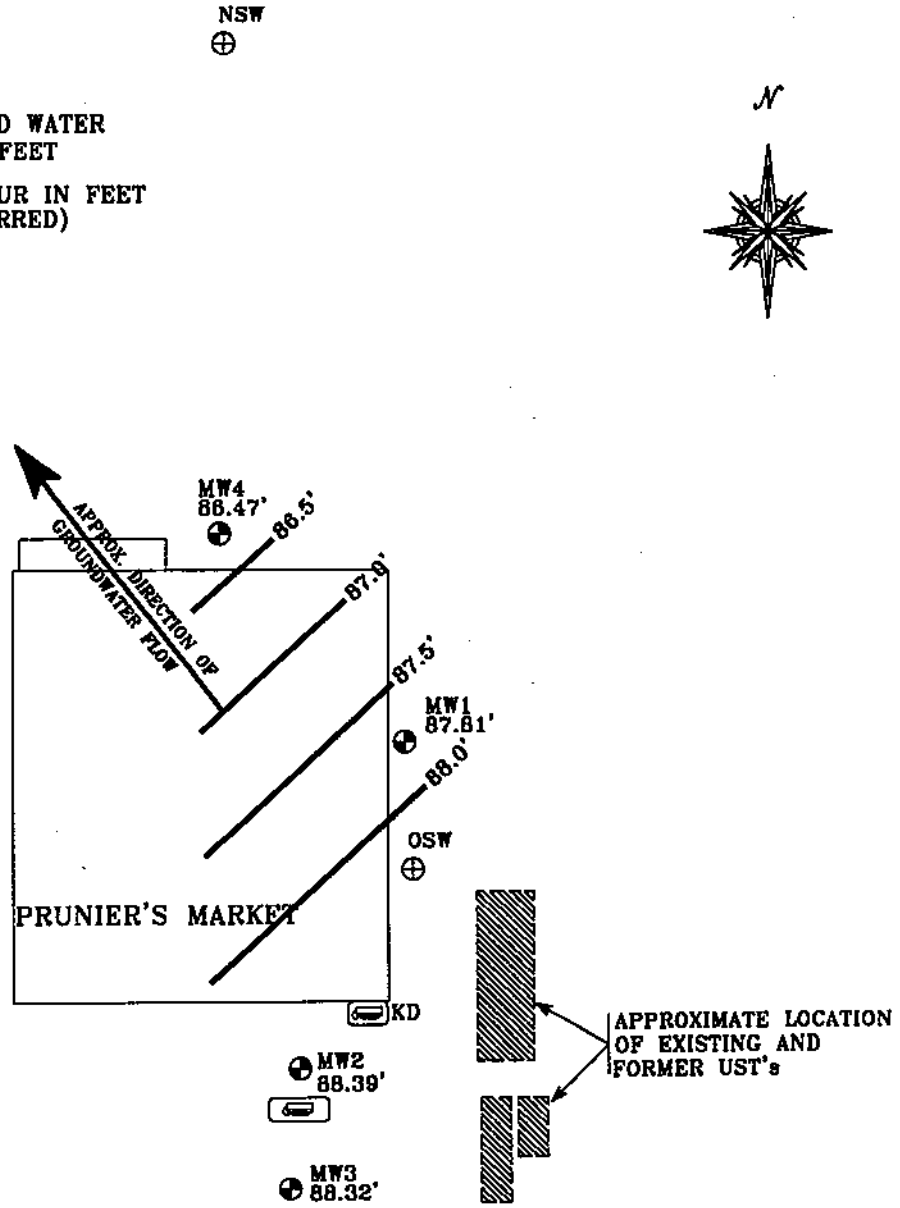
HYDEVILLE, VERMONT

SITE SKETCH

DATE: 6/9/98	DWG.#:2	SCALE: ~1"=40'	DRN.:SB	APP.:TK

LEGEND

- MW2 88.39' — MONITORING WELL AND WATER TABLE ELEVATION IN FEET
- 87.5' — GROUNDWATER CONTOUR IN FEET (DASHED WHERE INFERRED)
- OSW — OLD SUPPLY WELL
- NSW — NEW SUPPLY WELL
- KD — KEROSENE DISPENSER
- PUMP ISLAND



JOB #: 129741165

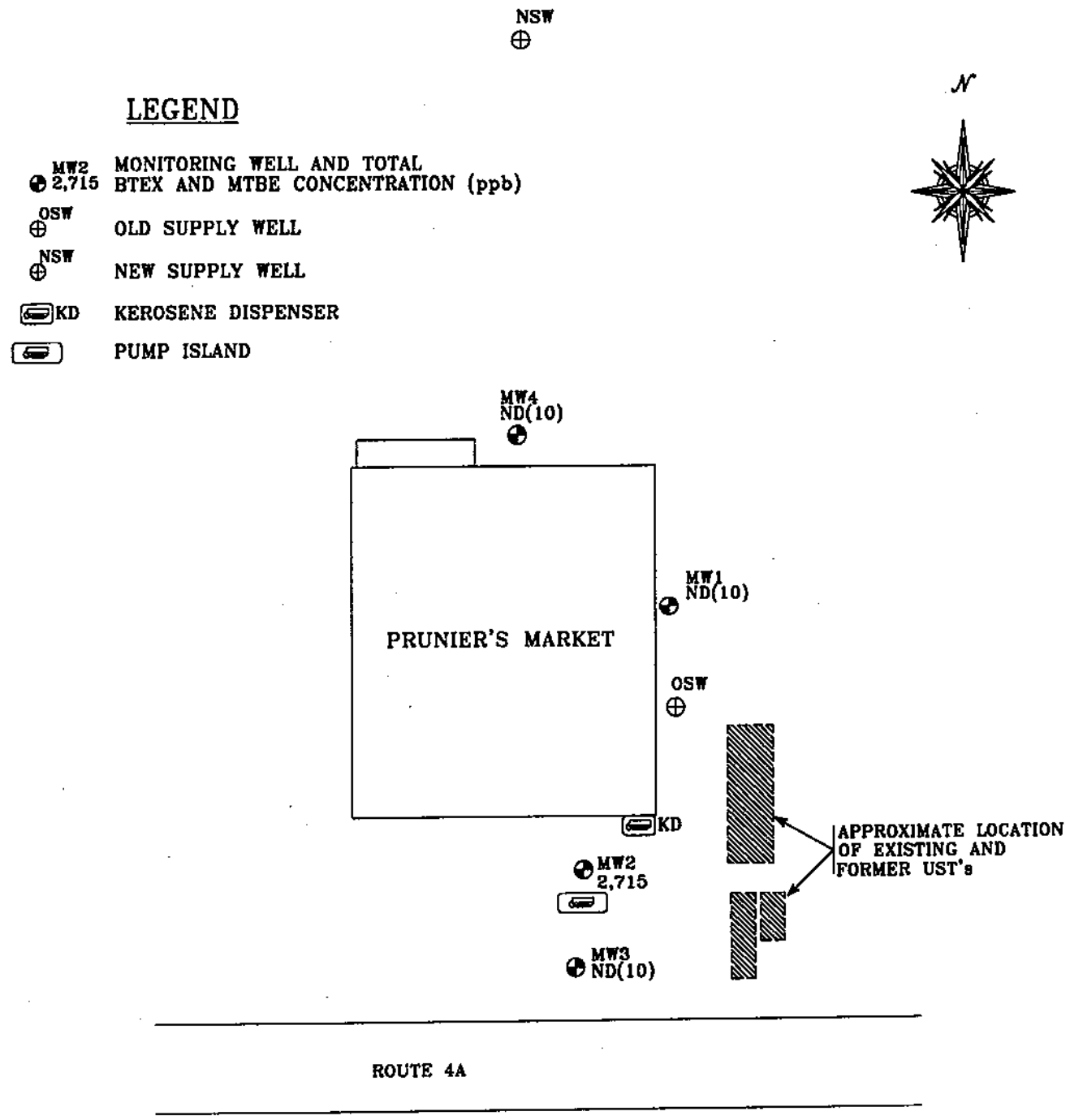
GRIFFIN INTERNATIONAL INC

PRUNIER'S MARKET

HYDEVILLE, VERMONT

GROUNDWATER CONTOUR MAP
MEASUREMENT DATE: 4/28/98

DATE: 6/10/98	DWG.#:3	SCALE: ~1"=40'	DRN.:SB	APP.:TK



JOB #: 129741165

GRIFFIN INTERNATIONAL INC

PRUNIER'S MARKET

HYDEVILLE, VERMONT

CONTAMINANT CONCENTRATION MAP
SAMPLE DATE: 4/28/98

DATE: 6/10/98	DWG.#:4	SCALE: ~1"=40'	DRN.:SB	APP.:TK

APPENDIX B

Monitoring Well Logs and Construction Records

BORING LOG

Boring no: MW-1

Page 1 of 1

Griffin Project #:	129741165	Drilling Method:	Vibratory
Drilled by :	Adams Engineering	Pilot Boring Dia.:	2.75"
Driller:	Gerry Adams	Final Boring Dia.:	2.25"
Supervised by:	Griffin International, Inc.	DTW from grade:	25'
Logged by:	T. Kelly	DTW Date/Time:	N/A
Date Started:	4-7-98	Total Depth:	29.4
Date Finished:	4-7-98	PID:	PI-101
Protection Level:	D		

Time	Sample No.	Depth (ft)	Blows/ 6" (140 lb.)	Pen/ Rec (")	PID (ppm)	Description and Comments
08:41	1	0.0 - 4.4	N/A	2.8	0	0' - 3" Asphalt 3" - 2.0' 60% SILT, low toughness, non-plastic, rapid dilatancy, low dry strength, 40% fine sand, medium brown, moist, weak HCl reaction 2.0' - 4.4' 95% fine to medium, grading to fine, SAND, 5% silt, moist, light brown, no odors/stains, no HCL reaction
08:53	2	4.4 - 9.4		3.7	0	4.4' - 7.1' 100% SILT, nonplastic, low toughness, rapid dilatancy, low dry strength 7.1' - 9.4' 95% fine SAND, 5% silt, moist, homogenous, no odors or stains
09:03	3	9.4 - 14.4		4.5	0	SAME AS ABOVE, Light grayish brown, stratified
09:22	4	14.4 - 19.4		3.8	0	SAME AS ABOVE, 100% fine SAND, local clay fragments/laminations
09:34						harder drilling, 19.4' - 24.4'
09:59	5	19.4 - 24.4		3.5	0	19.4' - 19.6' SAME AS ABOVE 19.6' - 22.0' 95% SILT, low toughness, non-plastic, rapid dilatancy, low dry strength, 5% fine sand, light brown, moist, locally wet, angular peds 22.0' - 24.4' 70% fine, angular SAND, 30% non-plastic silt, light brown, weak HCl reaction, moist
10:25	6	24.4 - 29.4		3.7	0	24.4' - 29.4' 85% fine SAND, 30% non-plastic silt, clay fragments, wet at 25', TD = 29.4'

Prepared by: TJK

GRIFFIN INTERNATIONAL

BORING LOG

Boring no: MW-2

Griffin Project #:	129741165	Drilling Method:	Vibratory
Drilled by :	Adams Engineering	Pilot Boring Dia.:	2.75"
Driller:	Gerry Adams	Final Boring Dia.:	2.25"
Supervised by:	Griffin International, Inc.	DTW from grade:	27.5'
Logged by:	T. Kelly	DTW Date/Time:	N/A
Date Started:	4-7-98	Total Depth:	29.8
Date Finished:	4-7-98	PID:	PI-101
Protection Level:	D		

Time	Sample No.	Depth (ft)	Blows/ 6" (140 lb.)	Pen/ Rec (")	PID (ppm)	Description and Comments
11:55	1	0.0 - 4.8	N/A	3.2	0	0' - 3" Asphalt 3" - 2.1' 60% fine to coarse, subrounded SAND, 40% low plasticity silt, medium brown, moist, weak HCl reaction 2.1' - 4.8' 80% fine to medium, subrounded, SAND, 20% silt, moist, medium-orange-brown, no HCL reaction
12:04	2	4.8 - 9.8		3.5	0	4.8' - 5.5' 90% SILT, nonplastic, low toughness, rapid dilatancy, low dry strength, 10% fine sand, angular peds, stratified, no HCl reaction, slight petroleum odor 5.5' - 6.5' 95% fine, subangular SAND, 5% silt moist, slight petroleum odor, no HCL reaction 6.5' - 8.0' 95% SILT, rapid dilatancy, low toughness, nonplastic, low dry strength, 5% fine sand 8.0' - 9.8' 95% fine, subangular SAND, 5% silt, moist, no HCl reaction
12:20	3	9.8 - 14.8		3.1	0.1	9.8' - 14.8' 90% fine, subangular SAND, 10% silt, moist, no HCl reaction, weak odor at 9.8' - 10 '
12:33	4	14.8 - 19.8		3.5	0.1	SAME AS ABOVE
12:49	5	19.8 - 24.8			0.1	19.8' - 21.4' SAME AS ABOVE, weak HCl reaction, hard drilling 19.8' - 24.8' 21.4' - 24.8' 95% SILT, low toughness, nonplastic, low dry strength, rapid dilatancy, 5% fine sand, moist, weak petroleum odor, weak HCl reaction
13:10	6	24.8 - 29.8		3.7	0.1	24.8' - 25.7' 95% SILT, low toughness, nonplastic, low dry strength, rapid dilatancy, 5% fine sand, weak HCl reaction, light brown, moist

Prepared by: TJK

GRIFFIN INTERNATIONAL

BORING LOG

Boring no: MW-2

Time	Sample No.	Depth (ft)	Blows/ 6" (140 lb.)	Pen/ Rec (")	PID	Description and Comments
	6	24.8 - 29.8			0.3	25.7' - 26.1' 95% fine, subanguar SAND, 5% silt, weak HCl reaction, light brown
					2.9	26.1' - 26.3' 95% SILT, with a 3-4 mm clay lense at 26.2', 5% clay
					34	26.3' - 29.8' 95% fine, subangular SAND, 5% silt, wet at 27.5', grades coarser down section

Prepared by: TJK

GRIFFIN INTERNATIONAL

BORING LOG

Boring no: MW-3

Griffin Project #:	129741165	Drilling Method:	Vibratory
Drilled by :	Adams Engineering	Pilot Boring Dia.:	2.75"
Driller:	Gerry Adams	Final Boring Dia.:	2.25"
Supervised by:	Griffin International, Inc.	DTW from grade:	N/A
Logged by:	T. Kelly	DTW Date/Time:	N/A
Date Started:	4-8-98	Total Depth:	34.8
Date Finished:	4-8-98	PID:	PI-101
Protection Level:	D		

Time	Sample No.	Depth (ft)	Blows/ 6" (140 lb.)	Pen/ Rec (")	PID (ppm)	Description and Comments
08:40	1	0.0 - 4.8	N/A	3.8	0	0' - 3" Asphalt 3" - 0.9' 60% SILT, low toughness, low plasticity, slow dilatancy, low dry strength, 40% fine to coarse sand, moist, medium brown, no odors, weak HCl reaction 0.9' - 4.8' 90% fine to medium, subangular SAND, 10% silt, moist, orange-brown, no HCl reaction, homogenous
08:49	2	4.8 - 9.8		4.0	0	4.8' - 6.3' 95% SAND, 5% silt, stratified, light brown moist, no odors or stains, no HCl reaction
09:04	3	9.8 - 14.8		3.8	0	9.8' - 10.5' SAME AS ABOVE 10.5' - 14.8 SAME AS ABOVE (but 100% SAND)
09:16	4	14.8 - 19.8		3.3	0	SAME AS ABOVE
09:25						hard drilling 19.8' - 24.8'
09:33	5	19.8 - 24.8		3.6	0	SAME AS ABOVE, weak HCl reaction
09:47						hard drilling, 24.8' - 29.8'
10:00	6	24.8 - 29.8		3.5	0.1	24.8' - 25.2' SAME AS ABOVE 25.2' - 25.7' 95% SILT, low toughness, nonplastic, low dry strength, rapid dilatancy, 5% fine sand, wet at 25.7 feet, weak HCl reaction, no odor 25.7' - 29.8' 95% fine, subangular SAND, 5% silt, moist, no odor or stains, weak HCl reaction, wet at 28.0'
10:19	7	29.8 - 34.8		4.2	0.8	29.8' - 31.0' SAME AS ABOVE 31.0' - 34.6' 100% fine to medium, subangular SAND wet, weak HCl reaction 34.6' - 34.8' 85% fine SAND. 15% nonplastic silt wet, weak HCl reaction

Prepared by: TJK

GRIFFIN INTERNATIONAL

BORING LOG

Boring no: MW-4

Griffin Project #:	129741165	Drilling Method:	Vibratory
Drilled by :	Adams Engineering	Pilot Boring Dia.:	2.75"
Driller:	Gerry Adams	Final Boring Dia.:	2.25"
Supervised by:	Griffin International, Inc.	DTW from grade:	N/A
Logged by:	T. Kelly	DTW Date/Time:	N/A
Date Started:	4-8-98	Total Depth:	29.4
Date Finished:	4-8-98	PID:	PI-101
Protection Level:	D		

Time	Sample No.	Depth (ft)	Blows/ 6" (140 lb.)	Pen/ Rec (")	PID (ppm)	Description and Comments
11:30	1	0.0 - 4.4	N/A	3.7	0	0' - 3" Sand and Gravel FILL 3" - 2.8' 85% fine to medium, subangular SAND 15% nonplastic silt, moist, medium orange brown to light brown, no HCl reaction 2.8' - 4.4' 90% SILT, nonplastic, low toughness, low dry strength, rapid dilatancy, 10% fine subangular sand, moist, no HCl reaction, angular peds
11:39	2	4.4 - 9.4		3.9	0.3	4.4' - 5.3' SAME AS ABOVE 5.3' - 9.4' 95% fine to medium, subangular SAND, 5% silt, moist, no HCl reaction
11:53	3	9.4 - 14.4		3.0	0.1	SAME AS ABOVE
12:01	4	14.4 - 19.4		3.9	0.1	SAME AS ABOVE, 100% sand locally light grayish brown, weak to no HCl reaction
12:20	5	19.4 - 24.4		2.8	0.1	19.4' - 21.2' SAME AS ABOVE 21.2' - 24.4' 85% fine SAND, 15% nonplastic silt, stratified, wet at 24.3', no HCl reaction, no odor
12:40	6	24.4 - 29.4		-	0.1	24.4' - 29.4' SAME AS ABOVE, homogenous

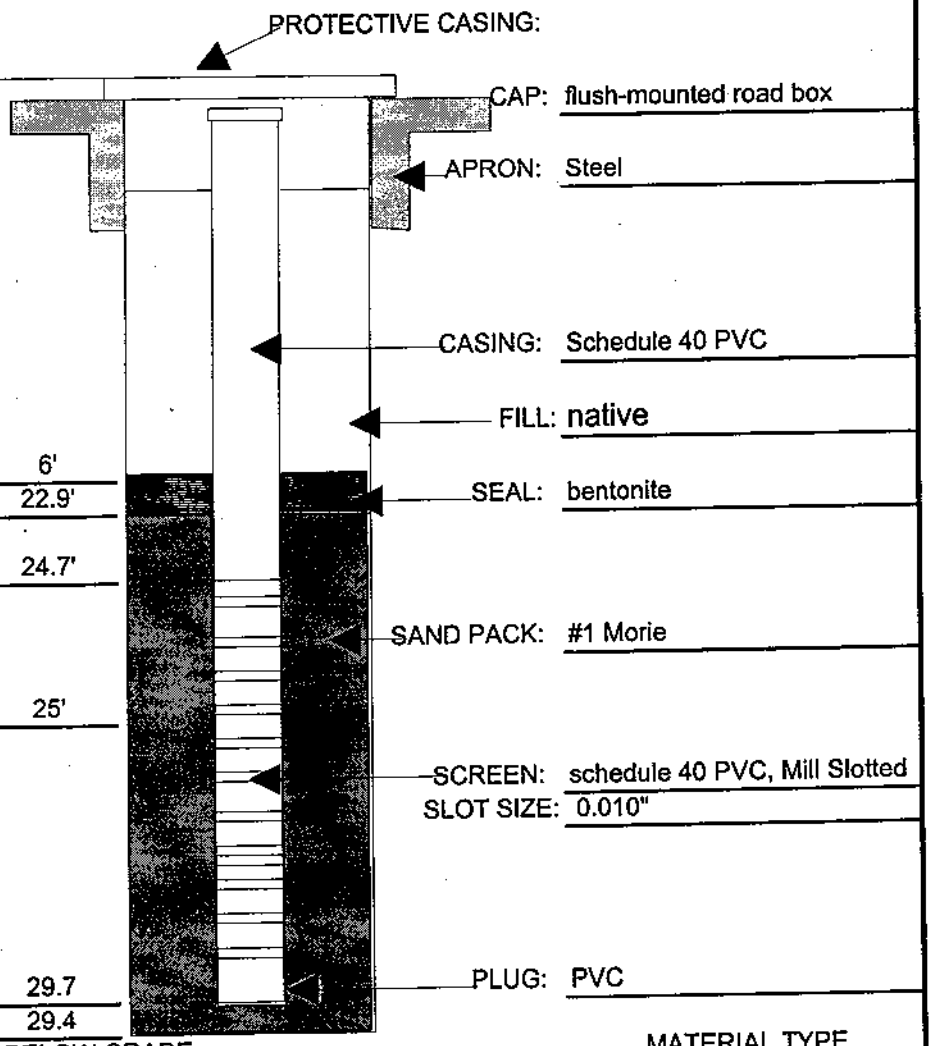
Prepared by: TJK

GRIFFIN INTERNATIONAL

Well Construction Diagram

PROJECT NAME: PRUNIER'S MARKET Well no: **MW-1**

Griffin Project #:	129741165	Date Installed:	4-7-98
Drilled by :	Adams Engineering	Drilling Method:	Vibratory
Driller:	Gerry Adams	Boring Diameter.:	2.75"
Supervised by:	Timothy Kelly	Well Inside Diameter:	1.5"
Logged by:	Timothy Kelly	Development Method:	peristaltic



Prepared by: TJK

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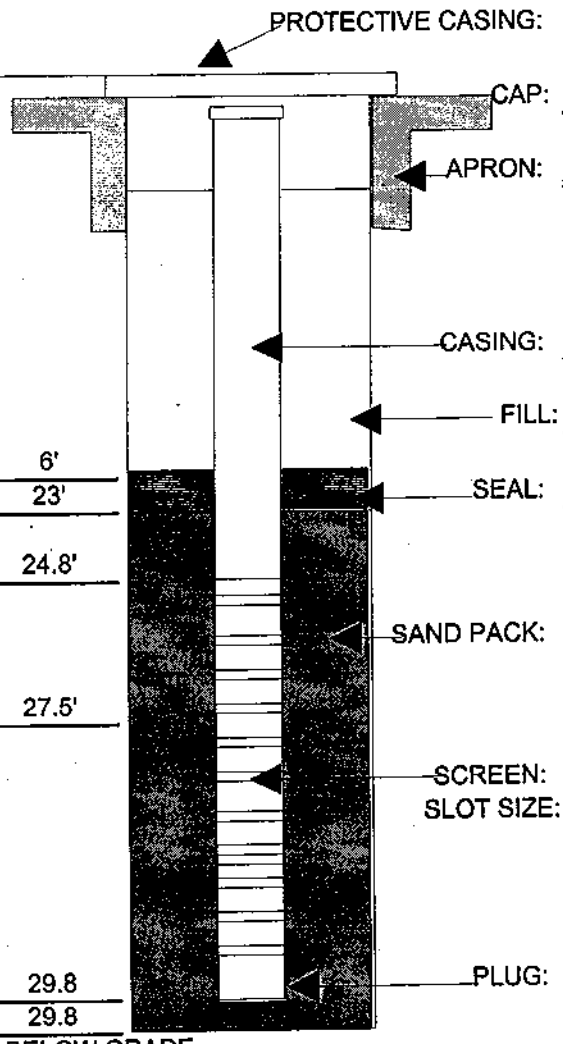
(802) 865 - 4288

GRIFFIN INTERNATIONAL

Well Construction Diagram

PROJECT NAME: PRUNIER'S MARKET Well no: **MW-2**

Griffin Project #:	129741165	Date Installed:	4-7-98
Drilled by :	Adams Engineering	Drilling Method:	Vibratory
Driller:	Gerry Adams	Boring Diameter.:	2.75"
Supervised by:	Timothy Kelly	Well Inside Diameter:	1.5"
Logged by:	Timothy Kelly	Development Method:	peristaltic



Prepared by: TJK

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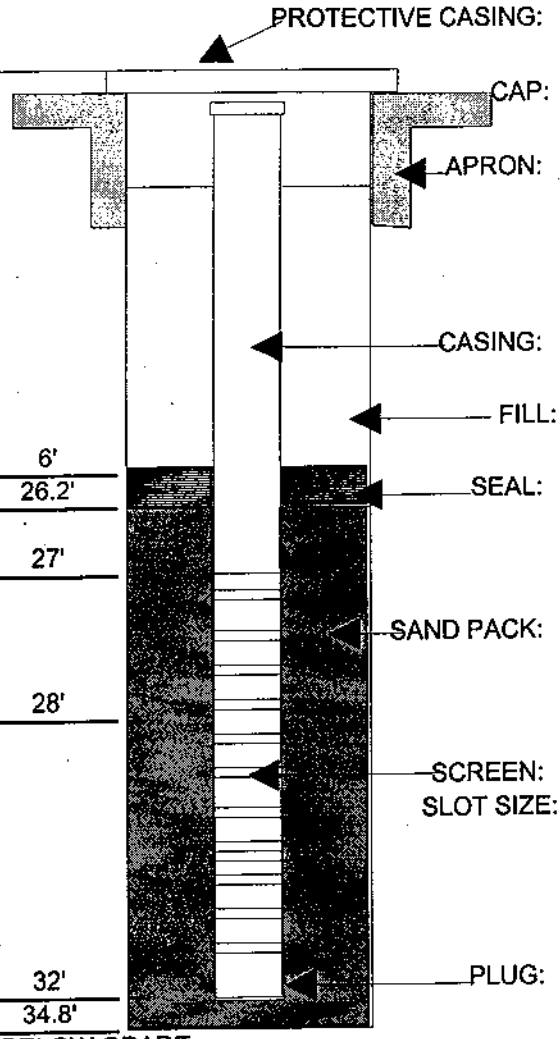
Well Construction Diagram

PROJECT NAME: PRUNIER'S MARKET Well no: **MW-3**

Griffin Project #:	129741165	Date Installed:	4-8-98
Drilled by :	Adams Engineering	Drilling Method:	Vibratory
Driller:	Gerry Adams	Boring Diameter.:	2.75"
Supervised by:	Timothy Kelly	Well Inside Diameter:	1.5"
Logged by:	Timothy Kelly	Development Method:	peristaltic



Prepared by: TJK

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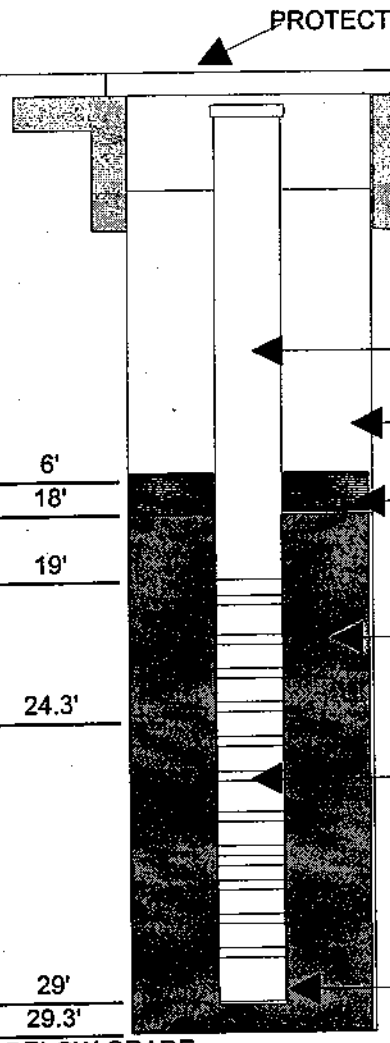
Well Construction Diagram

PROJECT NAME: PRUNIER'S MARKET Well no: **MW-4**

Griffin Project #:	129741165	Date Installed:	4-8-98
Drilled by :	Adams Engineering	Drilling Method:	Vibratory
Driller:	Gerry Adams	Boring Diameter.:	2.75"
Supervised by:	Timothy Kelly	Well Inside Diameter:	1.5"
Logged by:	Timothy Kelly	Development Method:	peristaltic



Prepared by: TJK

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APPENDIX C

Liquid Level Data, April 28, 1998

Liquid Level Monitoring Data, Prunier's Market
Hydeville, VT

Monitoring Date: 4-28-98

Well I.D.	Top of Casing Elevation	Depth to Product	Depth to Water	Product Thickness	Water Table Elevation
MW-1	100.00	-	12.19	-	87.81
MW-2	99.96	-	11.57	-	88.39
MW-3	99.88	-	11.56	-	88.32
MW-4	98.47	-	12.00	-	86.47

Note: All values reported in feet.
NM = Not Measured

APPENDIX D

Groundwater Quality Data, April 28, 1998

Summary of Groundwater Quality Data, Prunier's Market
Hydeville, VT

PARAMETER	4-28-98 MW1	MW2	MW3	MW4	VGES*
Benzene	ND(1)	**60.8**	ND(1)	ND(1)	**5.0**
Chlorobenzene	ND(1)	ND(5)	ND(1)	ND(1)	**100.0**
1,2-DCB	ND(1)	ND(5)	ND(1)	ND(1)	**600.0**
1,3-DCB	ND(1)	ND(5)	ND(1)	ND(1)	**600.0**
1,4-DCB	ND(1)	ND(5)	ND(1)	ND(1)	**75.0**
Ethylbenzene	ND(1)	**16.9**	ND(1)	ND(1)	**700.0**
Toluene	ND(1)	**98.1**	ND(1)	ND(1)	**1,000.0**
Xylenes	ND(1)	**1,270.**	ND(1)	ND(1)	**10,000.0**
Total BTEX	ND(1)	**1,445.8**	ND(1)	ND(1)	-
MTBE	ND(10)	**126.**	ND(10)	ND(10)	**40**
BTEX+MTBE	ND(10)	**2,715.8**	ND(10)	ND(10)	
TPH (mg/l)	ND(0.4)	**7.1**	ND(0.4)	ND(0.4)	-

All values reported in ug/L (ppb)

Detections are Bold

VGES - Vermont Groundwater Enforcement Standard, Source VT Groundwater Protection Rule and Strategy, 11/15/97

Values greater than the applicable VGES are shaded

NA - Not Analyzed

ND(5) - Not Detected (Detection Limit)

TBQ(1) - Trace Below Quantitation Limit (Detection Limit)

ENDYNE, INC.

Laboratory Services

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129741165

REPORT OF LABORATORY ANALYSIS

CLIENT: Griffin International
PROJECT NAME: Pruniers Mkt/129741165
DATE REPORTED: May 7, 1998
DATE SAMPLED: April 28, 1998

PROJECT CODE: GIPM1413
REF. #: 119,820 -119,823

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody record.

Chain of custody indicated sample preservation with HCl.

All samples were prepared and analyzed by requirements outlined in the referenced methods and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced methods.

Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy were monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

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LABORATORY REPORT

TOTAL PETROLEUM HYDROCARBONS (TPH) BY MODIFIED EPA METHOD 8100

DATE: May 7, 1998
CLIENT: Griffin International
PROJECT: Prunier's Mkt/#129741165
PROJECT CODE: GIPM1413
COLLECTED BY: WJD
DATE SAMPLED: April 28, 1998
DATE RECEIVED: April 29, 1998

Reference #	Sample ID	Concentration (mg/L)[1]
119,820	MW1; 1528	ND[2]
119,821	MW2; 1551	7.11
119,822	MW3; 1610	ND
119,823	MW4; 1511	ND

Notes:

1 Values quantitated based on the response of #2 Fuel Oil. Method detection limit is 0.4 mg/L.
2 None detected

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REPORT OF LABORATORY ANALYSIS

12974165

CLIENT: Griffin International
PROJECT NAME: Prunier's Mkt
REPORT DATE: May 4, 1998
DATE SAMPLED: April 28, 1998

PROJECT CODE: GIPM1412
REF.#: 119,813 - 119,819

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody. Chain of custody indicated sample preservation with HCl. However, sample 119817 was found to have a neutral pH.

All samples were prepared and analyzed by requirements outlined in the referenced method and within the specified holding times. All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced method. Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Individual sample performance was monitored by the addition of surrogate analytes to each sample. All surrogate recovery data was determined to be within laboratory QA/QC guidelines unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

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EPA METHOD 602--PURGEABLE AROMATICS

CLIENT: Griffin International
PROJECT NAME: Prunier's Mkt
CLIENT PROJ. #: 129741165

DATE RECEIVED: April 29, 1998
REPORT DATE: May 4, 1998
PROJECT CODE: GIPM1412

Ref. #:	119,813	119,814	119,815	119,816	119,817
Site:	MW 1	MW 2	MW 3	MW 4	Supply Well
Date Sampled:	4/28/98	4/28/98	4/28/98	4/28/98	4/28/98
Time Sampled:	15:28	15:51	16:10	15:11	16:25
Sampler:	W.J.D.	W.J.D.	W.J.D.	W.J.D.	W.J.D.
Date Analyzed:	5/3/98	5/3/98	5/3/98	5/3/98	5/3/98
UIP Count:	1	>10	1	1	0
Dil. Factor (%):	100	20	100	100	100
Surr % Rec. (%):	98	106	102	88	92
Parameter	Conc. (ug/L)	Conc. (ug/L)	Conc. (ug/L)	Conc. (ug/L)	Conc. (ug/L)
Benzene	<1	60.8	<1	<1	<1
Chlorobenzene	<1	<5	<1	<1	<1
1,2-Dichlorobenzene	<1	<5	<1	<1	<1
1,3-Dichlorobenzene	<1	<5	<1	<1	<1
1,4-Dichlorobenzene	<1	<5	<1	<1	<1
Ethylbenzene	<1	16.9	<1	<1	<1
Toluene	<1	98.1	<1	<1	<1
Xylenes	<1	1,270.	<1	<1	<1
MTBE	<10	126.	<10	<10	<10

Ref. #:	119,818	119,819
Site:	MW 3 Duplicate	Trip Blank
Date Sampled:	4/28/98	4/28/98
Time Sampled:	16:28	9:15
Sampler:	W.J.D.	W.J.D.
Date Analyzed:	5/3/98	5/3/98
UIP Count:	5	0
Dil. Factor (%):	100	100
Surr % Rec. (%):	95	97
Parameter	Conc. (ug/L)	Conc. (ug/L)
Benzene	<1	<1
Chlorobenzene	<1	<1
1,2-Dichlorobenzene	<1	<1
1,3-Dichlorobenzene	<1	<1
1,4-Dichlorobenzene	<1	<1
Ethylbenzene	<1	<1
Toluene	<1	<1
Xylenes	<1	<1
MTBE	<10	<10

Note: UIP = Unidentified Peaks TBQ = Trace Below Quantitation NI = Not Indicated

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CHAIN-OF-CUSTODY RECORD

26484

Project Name: 129741165 Site Location: PRUNIERS MKT, HYDEVILLE, VT	Reporting Address: GRIFFIN	Billing Address: GRIFFIN
Endyne Project Number: GIPM1413	Company: GRIFFIN Contact Name/Phone #: WILLIS DOE 8654288	Sampler Name: WJD Phone #: 8654288

Lab #	Sample Location	Matrix	GRAB	COMP	Date/Time 4-28-98	Sample Containers No.	Sample Containers Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
119820	MW1	GW	✓		1528	4	VOA		602/8100 TPH	HCl	
119821	MW2	GW			1551	4	VOA		602/8100	HCl	
119822	MW3	GW			1610	4	VOA		602/8100	HCl	
119823	MW4	GW			1511	4	VOA		602/8100	HCl	
119824	SUPPLY WELL	TAP H_2O			1625	4	VOA	Cancel as per WA	602/~~8100~~	HCl	
	MW1 DUPLICATE	GW			1528	2	VOA		602	HCl	
	TRIP BLANK	DISTILLED H_2O	↓		0915	2	VOA	TR 4/30	602	HCl	

Relinquished by: Signature Willis Doe	Received by: Signature Trish Desrochers	Date/Time 4-29-98 9:55
Relinquished by: Signature Trish Desrochers	Received by: Signature [illegible]	Date/Time 4/29/98 11:00

New York State Project: Yes ____ No ✓

Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD,	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify):										